

SEQUENCE LISTINGS

<110> PANGENOMICS Co., Ltd

<120> Her-2/neu DNA VACCINE HAVING ANTI-CANCER ACTIVITY

<130> PCA30540/PAN/PCT

<150> KR2002-41764
 <151> 2002-07-16

<150> KR2003-38012
 <151> 2003-06-12

<160> 24

<170> KopatentIn 1.71

<210> 1
 <211> 4530
 <212> DNA
 <213> human Her-2/neu gene cDNA

<400> 1

```

aattctcgag ctctctgacc ggtcgacgag ctctgagggtc gacgagctcg gggcgcgcg      60
ccgggcccc acccctcgca gcaccccgcg ccccgcgccc tcccagccgg gtccagccgg      120
agccatgggg ccggagccgc agtgagcacc atggagctgg cggccttggt ccgctggggg      180
ctcctcctcg cctctctgcc ccccgagacc gcgagcacc aagtgtgcac cggcacagac      240
atgaagctgc ggctccctgc cagtcctgag acccacctgg acatgtccg ccacctctac      300
cagggctgcc aggtggtgca gggaaacctg gaactcacct acctgcccac caatgccagc      360
ctgtccttcc tgcaggatat ccaggagggt cagggctacg tgctcatcgc tcacaaccaa      420
gtgaggcagg tccactgca gaggctgcgg attgtgcgag gcacccagct ctttgaggac      480
aactatgccc tggcgtgct agacaatgga gaccgctga acaataccac ccctgtcaca      540
ggggcctccc caggaggcct gcgggagctg cagcttcgaa gcctcacaga gatcttgaaa      600
ggaggggtct tgatccagcg gaacccccag ctctgctacc aggacacgat tttgtggaag      660
  
```

gacatcttcc acaagaacaa ccagctggct ctcacactga tagacaccaa ccgctctcgg 720
gcctgccacc cctgttctcc gatgtgtaag ggctcccgct gctggggaga gattctgag 780
gattgtcaga gcctgacgag cactgtctgt gccggtggct gtgcccgtg caaggggcca 840
ctgcccactg actgctgcca tgagcagtgt gctgccggct gcacggggcc caagcactct 900
gactgcctgg cctgcctcca cttcaaccac agtggcatct gtgagctgca ctgcccagcc 960
ctggtcacct acaacacaga cacgtttgag tccatgcccc atcccgaggg ccggtataca 1020
ttcggcgcca gctgtgtgac tgcctgtccc tacaactacc tttctacgga cgtgggatcc 1080
tgcacctctg tctgccccct gcacaaccaa gaggtgacag cagaggatgg aacacagcgg 1140
tgtgagaagt gcagcaagcc ctgtgcccga gtgtgctatg gtctgggcat ggagcacttg 1200
cgagaggatga gggcagttac cagtccaat atccaggagt ttgctggctg caagaagatc 1260
tttgggagcc tggcatttct gccggagagc tttgatgggg accagcctc caacactgcc 1320
ccgctccagc cagagcagct ccaagtgttt gagactctgg aagagatcac aggttaccta 1380
tacatctcag catggccgga cagcctgcct gacctcagcg tcttcagaa cctgcaagta 1440
atccggggac gaattctgca caatggcgcc tactcgtga cctgcaagg gctgggcatc 1500
agctggctgg ggctgcgctc actgaggaa ctgggcagtg gactggcct catccaccat 1560
aacaccacc tctgttctgt gcacacggtg ccctgggacc agctctttcg gaaccgcac 1620
caagctctgc tccacactgc caaccggcca gaggacgagt gtgtgggcca gggcctggcc 1680
tgccaccagc tgtgcgccc agggcactgc tgggtccag ggcccacca gtgtgtcaac 1740
tgcagccagt tcttcgggg ccaggagtgc gtggaggaat gccgagtact gcaggggctc 1800
cccaggagat atgtgaatgc caggcactgt ttgccgtgcc accctgagtg tcagccccag 1860
aatggctcag tgacctgttt tggaccggag gctgaccagt gtgtggcctg tgcccactat 1920
aaggaccctc ccttctgcgt gggccgctgc ccagcgggtg tgaaacctga cctctcctac 1980
atgcccatct ggaagtttcc agatgaggag ggcgcatgcc agccttgccc catcaactgc 2040

accactcct gtgtggacct ggatgacaag ggctgccccg cggagcagag agccagccct 2100
ctgacgtcca tcgtctctgc ggtgggtggc attctgctgg tcgtggcttt gggggtggtc 2160
tttgggatcc tcatcaagcg acggcagcag aagatccgga agtacacgat gcggagactg 2220
ctgcaggaaa cggagctggg ggagccgctg acacctagcg gagcgatgcc caaccaggcg 2280
cagatgcgga tctgaaaga gacggagctg aggaaggatg aggtgcttgg atctggcgct 2340
tttggcacag tctacaaggg catctggatc cctgatgggg agaattgtgaa aattccagt 2400
gccatcaaag tgttgaggga aaacacatcc cccaaagcca acaagaaat cttagacgaa 2460
gcatacgtga tggctgggtg gggctcccc aatgtctccc gccttctggg catctgcctg 2520
acatccacgg tgcagctggg gacacagctt atgccctatg gctgcctctt agaccatgtc 2580
cgggaaaacc ggggacgcct gggctcccag gacctgctga actggtgtat gcagattgcc 2640
aaggggatga gctacctgga ggatgtgcgg ctctacaca gggacttggc cgctcggaac 2700
gtgctggtca agagtcccaa ccatgtcaaa attacagact tgggctggc tggctgctg 2760
gacattgacg agacagagta ccatgcagat gggggcaagg tgcccatcaa gtggatggcg 2820
ctggagtcca ttctccgccg gcggttcacc caccagagtg atgtgtggag ttatggtgtg 2880
actgtgtggg agctgatgac ttttggggcc aaaccttacg atgggatccc agccggggag 2940
atccctgacc tgctggaaaa gggggagcgg ctgcccagc ccccatctg caccattgat 3000
gtctacatga tcatgggtcaa atgttggatg attgactctg aatgtcggcc aagattccgg 3060
gagttggtgt ctgaattctc ccgcatggcc agggaccccc agcgctttgt ggtcatccag 3120
aatgaggact tgggcccagc cagtcccttg gacagcacct tctaccgctc actgctggag 3180
gacgatgaca tgggggacct ggtggatgct gaggagtatc tggtagccca gcagggcttc 3240
ttctgtccag accctgcccc gggcgctggg ggcattgtcc accacaggca ccgcagctca 3300
tctaccagga gtggcggtgg ggacctgaca ctagggtgag agccctctga agaggaggcc 3360
cccaggcttc cactggcacc ctccgaaggg gctggctccg atgtatttga tggtagctg 3420

ggaatggggg cagccaaggg gctgcaaagc ctcccacac atgaccccag ccctctacag 3480
 cggtacagtg aggaccccac agtaccctg ccctctgaga ctgatggcta cgttgcccc 3540
 ctgacctgca gccccagcc tgaatatgtg aaccagccag atgttcggcc ccagccccct 3600
 tcgccccgag agggccctct gcctgtgccc cgacctgtg gtgccactct ggaaagggcc 3660
 aagactctct cccaggggaa gaatggggtc gtcaaagacg tttttgcctt tgggggtgcc 3720
 gtggagaacc ccgagtactt gacaccccag ggaggagctg cccctcagcc ccaccctct 3780
 cctgccttca gccagccctt cgacaacctc tattactggg accaggaccc accagagcgg 3840
 ggggtccac ccagcaccct caaagggaca cctacggcag agaaccaga gtacctgggt 3900
 ctggacgtgc cagtgtgaac cagaaggcca agtccgcaga agccctgatg tgcctcagg 3960
 gaggagggaa ggctgactt ctgctggcat caagaggtgg gaggccctc cgaccacttc 4020
 caggggaacc tgccatgcca ggaacctgtc ctaaggaacc ttcttctctg cttagattcc 4080
 cagatggctg gaaggggtcc agcctcgttg gaagaggaac agcactgggg agtctttgtg 4140
 gattctgagg cctgccccaa tgagactcta ggtccagtg gatgccacag ccagcttgg 4200
 ccctttcctt ccagatcctg ggtactgaaa gccttaggga agctggcctg agaggggaag 4260
 cgccctaag ggagtgtcta agaacaaaag cgaccattc agagactgtc cctgaaacct 4320
 agtactgccc cccatgagga aggaacagca atggtgtcag tatccaggct ttgtacagag 4380
 tgctttctg tttagttttt acttttttg tttgtttt ttaaagacga aataaagacc 4440
 caggggagaa tgggtgttgt atggggaggc aagtgtggg ggtccttctc cacaccact 4500
 ttgtccattt gcaaataat tttggaaaac 4530

<210> 2

<211> 2052

<212> DNA

<213> human Her-2/neu gene without intracellular region

<400> 2

atggagctgg cggccttgtg ccgctggggg ctctcctcg ccctcttggc ccccgagacc 60

gagagcacc c aagtgtgcac cggcacagac atgaagctgc ggctccctgc cagccccgag 120
accacactgg acatgctccg ccacctctac cagggctgcc aggtggtgca gggaaacctg 180
gaactcacct acctgcccac caatgccagc ctgtccttcc tgcaggatat ccaggagggtg 240
cagggctacg tgctcatgcg tcacaaccaa gtgaggcagg tccactgca gaggctgcgg 300
attgtgcgag gcaccagct ctttgaggac aactatgccc tggccgtgct agacaatgga 360
gacccgctga acaataccac cctgtcaca ggggcctccc caggaggcct gcgggagctg 420
cagcttcgaa gcctcacaga gatcttgaaa ggaggggtct tgatccagcg gaacccccag 480
ctctgctacc aggacacgat tttgtggaag gacatcttcc acaagaacaa ccagctggct 540
ctcactga tagacaccaa ccgctctcgg gcctgccacc cctgttctcc gatgtgtaag 600
ggctccgct gctggggaga gagttctgag gattgtcaga gcctgacgcg cactgtctgt 660
gccggtggct gtgccgctg caaggggcca ctgccactg actgctgcca tgagcagtgt 720
gctgccggt gcacggggcc caagcactct gactgcctgg cctgcctcca ctcaaccac 780
agtggcatct gtgagctgca ctgccagcc ctggtcacct acaacacaga cacgtttgag 840
tccatgcca atcccaggg ccgtataca ttccggcca gctgtgtgac tgcctgtccc 900
tacaactacc ttctacgga cgtgggatcc tgcacctcg ttgccccct gcacaaccaa 960
gaggtgacag cagaggatgg aacacagcg tgtgagaagt gcagcaagcc ctgtgcccga 1020
gtgtgctatg gctgggcat ggagcacttg cgagaggta gggcagttac cagtgccaat 1080
atccaggagt ttgctggctg caagaagatc tttgggagcc tggcatttct gccggagagc 1140
tttgatgggg acccagcctc caacactgcc ccgctccagc cagagcagct ccaagtgttt 1200
gagactctgg aagagatcac aggttaccta tacatctcag catggccgga cagcctgcct 1260
gacctcagcg tcttcagaa cctgcaagta atccggggac gaattctgca caatggcgcc 1320
tactcgctga cctgcaagg gctgggcac agctggctgg ggctgcgctc actgaggaa 1380
ctgggcagt gactggccct catccacat aacaccacc ttgcttctgt gcacacggtg 1440

ccctgggacc agctctttcg gaaccgcac caagctctgc tccactgc caaccggcca 1500
 gaggacgagt gtgtgggcca gggcctggcc tgccaccagc tgtgcgccc agggcactgc 1560
 tgggtccag gggccacca gtgtgtcaac tgcagccagt tccttcgggg ccaggagtgc 1620
 gtggaggaat gccgagtact gcaggggctc cccaggaggt atgtgaatgc caggcactgt 1680
 ttgccgtgcc accctgagtg tcagcccag aatggctcag tgacctgttt tggaccggag 1740
 gctgaccagt gtgtggcctg tgcccactat aaggaccctc ccttcgcgt gggccgctgc 1800
 cccagcggtg tgaacctga cctctcctac atgccatct ggaagtctcc agatgaggag 1860
 ggcgcattgc agccttgccc catcaactgc accactcct gtgtggacct ggatgacaag 1920
 ggcgccccg ccgagcagag agccagccct ctgacgtcca tcgtctctgc ggtggttggc 1980
 attctgctgg tcgtggtctt gggggtggtc ttgggatcc tcatcaagcg acggcagcag 2040
 aagatccgga ag 2052

<210> 3
 <211> 1956
 <212> DNA
 <213> human Her-2/neu gene without intracellular region and transmembrane domain

<400> 3
 atggagctgg cggccttggt ccgctggggg ctctcctcg ccctcttgc ccccgagcc 60
 gcgagcacc aagtgtgcac cggcacagac atgaagctgc ggctccctgc cagtcccag 120
 acccacctgg acatgctccg ccacctctac cagggtgccc aggtggtgca gggaaacctg 180
 gaactacct acctgccac caatgccagc ctgtccttcc tgcaggatat ccaggaggtg 240
 cagggtacg tgctcatgc tcacaaccaa gtgaggcagg tccactgca gaggctgcgg 300
 attgtgcgag gcaccagct ctttaggac aactatgcc tggcgtgct agacaatgga 360
 gaccgcgtga acaataccac cctgtcaca ggggcctccc caggaggcct gcgggagctg 420
 cagcttcgaa gcctcacaga gatcttgaag ggagggtct tgatccagcg gaacccccag 480

ctctgctacc aggacacgat ttgttggaag gacatcttcc acaagaacaa ccagctggct 540
ctcacactga tagacaccaa ccgctctcgg gcctgccacc cctgttctcc gatgtgtaag 600
ggctcccgt gctggggaga gatttctgag gattgtcaga gcctgacgag cactgtctgt 660
gccggtggct gtgcccgtg caaggggcca ctgccactg actgctgcca tgagcagtgt 720
gctgccggct gcacggggcc caagcactct gactgcctgg cctgcctcca ctcaaccac 780
agtggcatct gtgagctgca ctgccagcc ctggtcacct acaacacaga cacgtttgag 840
tccatgcca atcccgagg ccggtatata ttccggcga gctgtgtgac tgctgtccc 900
tacaactacc ttctacgga cgtgggatcc tgcacctcg tctgcccct gcacaacaa 960
gaggtgacag cagaggatgg aacacagcgg tgtgagaagt gcagcaagcc ctgtgccga 1020
gtgtgctatg gtctgggcat ggagcactg cgagaggta gggcagttac cagtccaat 1080
atccaggagt ttgtggctg caagaagatc ttggggagcc tggcatttct gccggagagc 1140
tttgatggg acccagcctc caacactgcc ccgctccagc cagagcagct ccaagtgtt 1200
gagactctgg aagagatcac aggttaccta tacatctcag catggccgga cagcctgcct 1260
gacctcagc tcttcagaa cctgcaagta atccggggac gaattctgca caatggcgcc 1320
tactcgtga cctgcaagg gctgggcac agctggctgg ggctgcgctc actgaggaa 1380
ctgggcagt gactggccct catccaccat aacaccacc tctgcttct gcacacggtg 1440
ccctgggacc agctctttcg gaaccgcac caagctctgc tccacactgc caaccggcca 1500
gaggacgagt gtgtggcgga gggcctggcc tgccaccagc tgtgcgccc agggcactgc 1560
tgggtccag ggccaccca gtgtgtcaac tgcagccagt tccttcggg ccaggagtgc 1620
gtggaggaat gccgagtact gcaggggctc ccaggagat atgtgaatgc caggcactgt 1680
ttgccgtgcc accctgagtg tcagccccag aatggctcag tgacctgtt tggaccggag 1740
gctgaccagt gtgtggcctg tgcccactat aaggaccctc ccttctcgt ggcccgctgc 1800
cccagcgggtg tgaacctga cctctctac atgcccactt ggaagtctcc agatgaggag 1860

ggcgcatgcc agccttgccc catcaactgc acccactcct gtgtggacct ggatgacaag 1920

ggctgccccg ccgagcagag agccagccct ctgacg 1956

<210> 4
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> NF6 primer

<400> 4 27
ggtaccatgg agctggcggc ctgtgc

<210> 5
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> NSR1 primer

<400> 5 31
gtctagatga ttcacgtcag agggctggct c

<210> 6
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> NF5 primer

<400> 6 23
gcagtgtac ccaagcttag cac

<210> 7

<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> NRM2 primer

<400> 7
ttctagagca gtctccgcat cgtctac

27

<210> 8
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> NSF2 primer

<400> 8
ggcgcgcccc ggcacagaca tgaagctg

28

<210> 9
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> NF3 primer

<400> 9
gccgcagcgg ccgccatgga gctg

24

<210> 10
<211> 1535
<212> DNA
<213> mouse Eta-1 gene

<400> 10
gggggggggg gggggggggg ggggctttcc ttgctcctta tgagaggtgg agaggtagaa

60

aaggcacaca aatattgact cactgaaatt ttctctgaga ttagaaaaga ttccataaat 120
tattgggtgac ttgggtggga tctagtgggtg ccaagagtgt gtttgaacct gacaagacat 180
caactgtgcc tcataaaata tggtgcagga ctaactacga ccatgagatt ggcagtgatt 240
tgcttttgcc tgtttggcat tgcctcctcc ctcccggtga aagtactga ttctggcagc 300
tcagaggaga agctttacag cctgcaccca gatcctatag ccacatggcc ggtgcctgac 360
ccatctcaga agcagaatct ccttgcgcca cagaatgctg tgtcctctga agaaaaggat 420
gactttaagc aagaaactct tccaagcaat tccaatgaaa gccatgacca catggacgac 480
gatgatgacg atgatgatga cgatggagac catgcagaga gcgaggattc tgtggactcg 540
gatgaatctg acgaatctca ccattcggat gagtctgatg agaccgtcac tgctagtaca 600
caagcagaca ctttactcc aatcgctcct acagtogatg tccccaacgg ccgaggtgat 660
agcttggctt atggactgag gtcaaagtct aggagtctcc aggtttctga tgaacagtat 720
cctgatgcca cagatgagga cctcacctct cacatgaaga gcggtgagtc taaggagtcc 780
ctcgatgtca tccctgttgc ccagctctg agcatgccct ctgatcagga caacaacgga 840
aagggcagcc atgagtcaag tcagctggat gaaccaagtc tggaaacaca cagacttgag 900
cattccaaag agagccagga gagtgcgat cagtccgatg tgatcgatag tcaagcaagt 960
tccaaagcca gccctggaaca tcagagccac aagtctcaca gccacaagga caagctagtc 1020
ctagacccta agagtaagga agatgatagg tatctgaaat tccgaatttc tcatgaatta 1080
gagagttcat ctctgaggt caactaaaga agaggcaaaa acacagttcc ttactttgca 1140
tttagtaaaa acaagaaaaa gtgttagtga gggtaagca ggaatactaa ctgctcatit 1200
ctcagttcag tggatatatg tatgtagaga aagagaggta atattttggg ctcttagctt 1260
agtcgttgt ttcatgcaaa caccgttgta accaaaagct tctgcacttt gcttctgttg 1320
ttcctgtaca agaaatgcaa cggccactgc attttaatga ttgtattct tcatgaata 1380
aatgtatgt agaaataagt aaatttactg aaacaagcaa gaattaaaag agaaactgta 1440

acagtctata tcactataacc cttttagttt tataattagc atatattttg ttgtgattta 1500
 tttttttttg ttggtgtgaa taaatcttgt taacg 1535

<210> 11
 <211> 1535
 <212> DNA
 <213> mouse IL-18 gene

<400> 11
 gggggggggg gggggggggg ggggctttcc ttgctcctta tgagaggtagg agaggtagaa 60
 aaggcacaca aatattgact cactgaaatt ttctctgaga tgtagaaaga ttccataaat 120
 tattggtgac ttggtggtga tctagtgggt ccaagagtgt gtttgaacct gacaagacat 180
 caactgtgcc tcataaaata tgttgcagga ctaactacga ccatgagatt ggcagtgatt 240
 tgcttttgcc tgtttggcat tgccctctcc ctcccgggtga aagtgactga ttctggcagc 300
 tcagaggaga agctttacag cctgcaccca gatcctatag ccacatggcc ggtgcctgac 360
 ccatctcaga agcagaatct ccttgcgcca cagaatgctg tgtcctctga agaaaaggat 420
 gactttaagc aagaaactct tccaagcaat tccaatgaaa gccatgacca catggacgac 480
 gatgatgacg atgatgatga cgatggagac catgcagaga gcgaggattc tgtggactcg 540
 gatgaatctg acgaatctca ccattcggat gagtctgatg agaccgtcac tgctagtaca 600
 caagcagaca ctttcaactcc aatcgctcct acagtcatg tccccaacgg ccgagggtgat 660
 agcttggcct atggactgag gtcaaagtct aggagtttcc aggtttctga tgaacagtat 720
 cctgatgcc aagatgagga cctcacctct cacatgaaga gcggtgagtc taaggagtcc 780
 ctgatgtca tccctgttgc ccagcttctg agcatgccct ctgatcagga caacaacgga 840
 aagggcagcc atgagtcaag tcagctggat gaaccaagtc tggaaacaca cagacttgag 900
 cattccaaag agagccagga gagtgccgat cagtccgatg tgatcgatag tcaagcaagt 960
 tccaaagcca gccctggaaca tcagagccac aagtttcaca gccacaagga caagctagtc 1020
 ctagacccta agagtaagga agatgatagg tatctgaaat tccgaatttc tcatgaatta 1080

gagagttcat cttctgaggt caactaaaga agaggcaaaa acacagttcc ttactttgca 1140
 tttagtaaaa acaagaaaaa gtgttagtga gggtaagca ggaatactaa ctgctcattt 1200
 ctcagttcag tggatataatg tatgtagaga aagagaggta atattttggg ctcttagctt 1260
 agtctgttgt ttcattgcaa caccgttgta accaaaagct tctgcacttt gcttctgttg 1320
 ttctgtaca agaaatgcaa cggccactgc attttaatga ttgttattct ttcattgaata 1380
 aaatgtatgt agaaataagt aaatttactg aaacaagcaa gaattaaaag agaaactgta 1440
 acagtctata tcaactatacc cttttagttt tataattagc atatatattg ttgtgattta 1500
 ttttttttg ttggtgtgaa taaatcttgt taacg 1535

<210> 12
 <211> 1250
 <212> DNA
 <213> mouse IL-15

<400> 12
 cttctgtcca gccactcttc cccagagttc tcttcttcat cctccccctt gcagagtagg 60
 gcagcttgca ggtctctctg caagtctctc ccaattctct gcgccccaaa gacttgcaat 120
 gcatctctti acggcgtgca gggaccttgc cagggcagga ctgccccgc ccagttgcag 180
 agttggacga agacgggatc ctgctgtgtt tggaaggctg agttccacat ctaacagctc 240
 agagaggta ggaagaatc caccttgaca catggccctc tggctcttca aagcactgcc 300
 tcttcatggt ccttgctggt gaggtcctta agaacacaga aacctatgtc agcagataac 360
 cagcctacag gaggccaaga agagtcttgg atggatggca gctggaagcc catgccata 420
 gccagctcat cttaacatt gaagctctta cctgggcatt agtaaatgaa aattttgaaa 480
 ccataatga ggaatacatc catctgtgc tacttgtgtt tcttctaaa cagtcacttt 540
 ttaactgagg ctggcattca tgtcttcatt ttgggtgtg tcagtgtagg tctccctaaa 600
 acagaggcca actggataga tgaagatat gacctggaga aaattgaaag ccttattcaa 660

totattcata ttgacaccac tttatacact gacagtgact ttcatcccag ttgcaaagtt 720
 actgcaatga actgctttct cctggaattg caggttattt tacatgagta cagtaacatg 780
 actcttaatg aaacagtaag aaacgtgctc taccttgcaa acagcactct gtcttctaac 840
 aagaatgtag cagaatctgg ctgcaaggaa tgtgaggagc tggaggagaa aaccttcaca 900
 gagtttttgc aaagctttat acgcattgtc caaatgttca tcaacacgtc ctgactgcat 960
 gcgagcctct tccgtgtttc tgttattaag gtacctccac ctgctgctca gaggcagcac 1020
 agctccatgc atttgaaatc tgcctgggcaa actaagcttc ctaacaagga gataatgagc 1080
 cacttggatc acatgaaatc ttggaaatga agagaggaaa agagctcgtc tcagacttat 1140
 ttttgcttgc ttatttttaa tttattgctt catttgtaca tatttgtaat ataacagaag 1200
 atgtggaata aagttgtatg gatattttat caattgaaat ttaaaaaaaaa 1250

<210> 13
 <211> 699
 <212> DNA
 <213> mouse Flt3L gene

<400> 13
 atgacagtgc tggcgccagc ctggagccca aattcctccc tgttctgct gttgctgctg 60
 ctgagtcctt gcctgcgggg gacacctgac tgttacttca gccacagtcc catctcctcc 120
 aacttcaaag tgaagtttag agagttgact gaccacctgc ttaaagatta cccagtcact 180
 gtggccgtca atcttcagga cgagaagcac tgcaaggcct tgtggagcct cttcctagcc 240
 cagcgctgga tagagcaact gaagactgtg gcagggtcta agatgcaaac gcttctggag 300
 gacgtcaaca ccgagataca ttttgtcacc tcatgtacct tccagcccct accagaatgt 360
 ctgcgattcg tccagaccaa catctccac ctctgaagg acacctgcac acagctgctt 420
 gctctgaagc cctgtatcgg gaaggcctgc cagaatttct ctgggtgcct ggaggtgcag 480
 tgccagccgg actcctccac cctgtctgcc ccaaggagtc ccatagccct agaagccacg 540
 gagctcccag agcctcggcc caggcagctg ttgctcctgc tgctgctgct gctgcctctc 600

acactggtgc tgctggcagc cgctggggc ctctgctggc aaagggcaag aaggaggggg 660

gagctccacc ctggggtgcc cctcccctcc catccctag 699

<210> 14
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> EF1 primer

<400> 14 21
ctggtaccat gagattggca g

<210> 15
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> ER1 primer

<400> 15 22
cctctagatt agttgacctc ag

<210> 16
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> 18F1 primer

<400> 16 25
tgaattcatg gctgcatgt cagaa

<210> 17

<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> 18R1 primer

<400> 17
ttctagacta actttgatgt aag

23

<210> 18
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> 15F1 primer

<400> 18
tgaattcatg aaaattttga aaccatat

28

<210> 19
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> 15R1 primer

<400> 19
ttctagacta aaagctttgc aaaaactctg tgaag

35

<210> 20
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> FF1 primer

<400> 20
tgaattcatg acagtgtgg cgcc

24

<210> 21
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> FR1 primer

<400> 21
ttctagacta ctgcctgggc cgag

24

<210> 22
<211> 600
<212> DNA
<213> IRES sequence from pCK-mIL12

<400> 22
ggatccgata agcttgatat cgaattccgc ccccccccc cctaacgtta ctggccgaag 60
ccgcttggaa taaggccggt gtgcgtttgt ctatatgta tttccacca tattgccgtc 120
ttttggcaat gtgagggccc ggaaacctgg ccctgtcttc ttgacgagca ttcttagggg 180
tctttccct ctgccaaag gaatgcaagg tctgttgaat gtcgtgaagg aagcagttcc 240
tctggaagct tcttgaagac aaacaacgtc tgtagcgacc cttgcaggc agcggaaccc 300
cccacctggc gacaggtgcc tctgcggcca aaagccacgt gtataagata cacctgcaaa 360
ggcggcaciaa cccagtgcc acgttgtgag ttggatagtt gtggaagag tcaaatggct 420
ctcctcaagc gtattcaaca aggggtgaa ggatgcccc aaggtacccc attgtatggg 480
atctgatctg gggcctcggg gcacatgctt tacatgtgtt tagtccaggt taaaaaacg 540
tctaggcccc ccgaaccacg gggacgtggt tttcctttga aaaacacgat aataccatgg 600

<210> 23

<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> IRES-F1 primer

<400> 23
gcggccgcga taagcttgat atcgaattcc g

31

<210> 24
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> IRES-R1 primer

<400> 24
ctcgagtatt atcgtgtttt tcaaagg

27